dicted combination therapy with ATX, LAS, and A2As. This suggests these medications may be used differently in clinical practice.

PMH20

FACTORS ASSOCIATED WITH HIGHER HEALTH CARE RESOURCE USE AMONG PATIENTS WITH BIPOLAR DISORDER: RESULTS FROM A LARGE MULTINATIONAL LONGITUDINAL STUDY (WAVE-BD)

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OBJECTIVES: Bipolar disorder (BD) is associated with a high burden on healthcare resources. A secondary objective of the Wide AmbispectiVE study of the clinical management and burden of bipolar disorder (WAVE-bd) was to assess healthcare resource utilization among BD patients. **METHODS:** Multinational, multicenter, non-interventional, cohort study of patients diagnosed with BD-I/BD-II with ≥1 mood episode in the preceding 12 months (retrospective data collection) followed by a minimum 9 months' prospective follow-up. Study population was representative of BD populations from 8 European and 2 Latin American countries. Multivariate analyses determined factors associated with higher incidence of resource use (number of visits per year), measured by parameter estimates (ParEst [95% CI]) >0. **RESULTS:** Multivariate analyses included 2,896 patients. Factors associated with a higher incidence of hospitalizations included: psychotic symptoms during the study index episode (0.08 [0.02; 0.14]); a higher number of previous hospitalizations (0.04 [0.03; 0.04]); receiving anxiolytics during the study index episode (0.12 [0.06; 0.17]); enrolment in hospital settings (0.13 [0.03; 0.23]). The incidence of emergency room visits was increased in patients with: rapid cycling (0.13 [0.06; 0.19]); a history of suicide attempts (0.08 [0.02; 0.14]); a higher number of previous hospitalizations (0.01 [0.01; 0.02]). The incidence of programmed psychiatrist visits was increased in patients: with rapid cycling (0.90 [0.36; 1.44]); with a higher number of previous hospitalizations (0.11 [0.06; 0.16]); enrolled in private practices (1.31 [0.07; 2.55]); receiving antipsychotics during study index event (0.81 [0.37; 1.25]). Overall, clinical factors associated with higher incidence of resource use included: rapid cycling (2.22 [0.84; 3.61]); co-morbidity of thyroid disease (2.21 [0.49; 3.92]); a higher number of previous hospitalizations (0.25 [0.12; 0.38]); receiving antipsychotics during the study index episode (1.63 [0.50; 2.76]). **CONCLUSIONS:** Several clinical factors are associated with higher resource utilization in BD patients. These factors could aid in identification of high-risk patients.

PMH21

A SYSTEMATIC REVIEW OF EFFECT OF ANTIPSYCHOTIC AGENTS ON MORTALITY IN SCHIZOPHRENIA

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OBJECTIVES: Mortality among schizophrenia patients is higher than the general population. Antipsychotics are the mainstay of schizophrenia treatment but have been linked to life threatening adverse events. Therefore the objective of the study was to systematically review available literature examining the risk of mortality associated with antipsychotic use among schizophrenia patients. **METHODS:** Systematic review of English literature was conducted in MEDLINE, PubMed, PsychInfo, EMBASE, Cochrane databases, and IPA from 1966 to October 2011 using nine element eligibility criteria to identify studies examining the association between antipsychotic use and mortality. The primary inclusion criteria involved diagnosis of schizophrenia, exposure to antipsychotics, at least one year follow up, and ascertainment of mortality. Findings from case-control, cohort, and controlled trial studies were abstracted for evidence table preparation and possible meta-analyses. **RESULTS:** Overall sixteen studies were included after employing nine element eligibility criteria. The studies were heterogeneous in terms of study designs; follow up period, and control of selection bias and confounding. Consequently meta-analysis was not conducted. Nine out of sixteen studies concluded increased risk of mortality among antipsychotic users compared to non-users. Three out of four studies examining the antipsychotic polypharmacy found significant positive effect on mortality. One out of two studies examining the compliance with antipsychotics found negative effect on mortality. One out of two studies examining association of antipsychotic dosages found significant association with increased mortality. One study ascertained stable association with antipsychotic treatment intensity and increased cardiovascular mortality while other found no significant association. The follow up period varied from 1 to 17 years. Prospective studies controlled for lifestyle related factors while retrospective studies for some comorbidities and co-medications. **CONCLUSIONS:** Literature review revealed that antipsychotic use and antipsychotic polypharmacy increased the risk of mortality. Well designed observational studies accounting for selection bias and confounding are needed to establish the relationship.

PMH22

CORRELATES OF DROPOUT FROM COMMUNITY-BASED METHADONE MAINTENANCE TREATMENT PROGRAM IN INDONESIA

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OBJECTIVES: To study factors associated with risk of dropout among heroin addicts enrolled in a community-based methadone maintenance treatment (MMT) clinic in Solo, Central Java, Indonesia. **METHODS:** This was an ambi-directional cohort study. The index date was patients' first entry identified from medical records. Patients enrolled from September 2009 were followed up until departure from the clinic or otherwise censored in May 2011. Other data collected were methadone doses, risk behaviour, and sociodemographic characteristics. Kaplan-Meier method was used to estimate retention rate and Cox proportional hazard regressions were used to determine factors associated with dropout from treatment. **RESULTS:** Ninety-eight patients aged 31.6 years old on average contributed to 14,804 person-days of folllow up. The retention rate was 24.2% after 21 months with median retention time of 78 days. The median and maximum dose were 43.1 mg and 150 mg, respectively. Multivariate analysis showed that methadone dose below 80 mg (HR=2.4, p=0.014, 95% CI=1.2-4.8) and absence of family support (HR=5.0, p<0.001, 95% CI=2.4-10.6) were significantly associated with risk of dropout. HIV status, overdose history, criminal record, duration of addiction, distance from clinic, marital status, and employment were not statistically significant predictors of dropout. **CONCLUSIONS:** Despite high prevalence of injecting drug users (IDUs) in the area, low retention rate of the MMT clinic indicates that the community-based program might have been suboptimally utilised or else poorly managed. Attaining maintenance phase at a minimum dose of 60 mg was insufficient to ensure compliance. Health workers should maintain relationships with patients' family to help support and monitor the treatment. Similar studies in hospital or correctional institution settings and/or other areas are needed to confirm the findings as well as economic analyses to anticipate waste of resources.

MENTAL HEALTH – Cost Studies

PMH23

IMPACT OF REFILL AND SAVE PROGRAM ON ADHERENCE TO DESVENLAFAXINE AND EXTENDED RELEASE VENLAFAXINE HCL

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OBJECTIVES: Depressive disorders affect ~35 million US adults annually. A large US health plan offers some members a "Refill and Save Program" (RSP), with discounted copayments for desvenlafaxine (DSV) and extended-release venlafaxine (VENXR) when refilled within 30 days after previous fill run-out. This study compared adherence between RSP and non-RSP cohorts. **METHODS:** This retrospective claims database study examined adult commercial members with ≥1 claim for DSV or VENXR from October 1, 2009 – March 31, 2010; the first claim date was index date. Members with schizophrenia were excluded. Members were continuously enrolled for 6 months pre-index and 9 months post-index. Proportion of days covered (PDC) on index antidepressant was modeled with ordinary least-squares regression, controlling for index antidepressant, naïve antidepressant use, demographic and plan characteristics. Subset analysis was conducted on naïve and continuing index antidepressant users and on subjects with no change in post-index RSP exposure. **RESULTS:** The study population included 46,138 members with mean age 48±12 years and 75.3% female, divided between RSP (n=28,925) and non-RSP (n=17,213): 21.4% were naïve to their index antidepressants. Mean PDC was 69% in RSP, 65% in non-RSP (p<0.001). Regression results showed PDC was 6.5 percentage points higher (p<0.001) in the RSP versus non-RSP cohort. PDC in RSP cohort was 8.2 percentage points higher (p<0.001) among naïve index antidepressant users, and 6.4 percentage points higher (p<0.001) among continuing users. Analyses on those with no change in post-index RSP exposure yielded similar significant results but with smaller effect. **CONCLUSIONS:** The RSP cohort, versus non-RSP, had higher index antidepressant PDC. These results suggest that copayment discounts may have a positive impact on adherence to desvenlafaxine and extended-release venlafaxine HCl.

PMH24

DIFFERENCES IN HEALTH CARE UTILIZATION AND ASSOCIATED COSTS BETWEEN PATIENTS PRESCRIBED VERSUS NOT PRESCRIBED OPIOIDS DURING AN INPATIENT OR EMERGENCY DEPARTMENT VISIT

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OBJECTIVES: Compare health care resource utilization (HCRU) and costs between patients prescribed opioids versus those who were not during emergency department (ED) or inpatient visits. **METHODS:** Patients with ED/inpatient visits were selected from the MarketScan Commercial and Medicare Supplemental Database linked with the Marketscan Hospital Discharge Database (1/12007–9/30/2009). Patients prescribed opioids in the ED/inpatient setting were assigned to the 'Opioid Patient (RxOP)' cohort. The first prescription date was the index date. Among patients not prescribed opioids, the 'Non-Opioid Patient (NoRxOP)' cohort, a random date between the first ED/inpatient admission and 30SEPT2009 served as the index date. Additional inclusion criteria were: age older than 12 years at index date, and 12 months of continuous enrollment before and after the index date. Patients with opioid prescriptions during the pre-index period were excluded. Differences in patients' age, gender, geographic region, comorbidities, and HCRU during the pre-index period were adjusted by 1:1 propensity score (PS) matching (PSM). **RESULTS:** Overall, opioids were prescribed in 56% of patients in ED, and 71% in inpatient setting. After excluding patients with pre-index opioid use (N=163), among 27,599 eligible patients, 68% (RxOP: N=18,819) were prescribed opioids, and 32% (NoRxOP: N=8,780) were not. The majority of patients (96%, N=18,031) were prescribed immediate-release opioids and 4% (N=788) extended-release opioids (LAO use slightly higher in ED versus inpatient, 6.5% versus 3.7%, p<0.01). Among the 5099 PS matched patients, adjusted results showed that RxOP patients had more inpatient

(1.58 vs. 0.36, $p<0.01$), physician (10.17 vs.8.96, $p<0.01$) and ED visits (1.12 vs. 0.67, $p<0.01$) than NoRxOP patients in the follow-up period. RxOP users had twice the total healthcare costs ($49,766 vs. $19,875, $p<0.01$) than NoRxOp patients. **CONCLUSIONS:** A large percentage of patients are prescribed opioids for the first time during ED/inpatient visits and incur a significantly higher resource use and economic burden than those who are not.

PMH25

COST AND USE OF RESOURCES IN PATIENTS WITH SCHIZOPHRENIA AND BIPOLAR DISORDER SWITCHING FROM IMMEDIATE RELEASE QUETIAPINE (QTP-IR) TO EXTENDED RELEASE QUETIAPINE (QTP-XR) IN ITALY- THE IBIS STUDY

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OBJECTIVES: Schizophrenia and bipolar disorder (BD) are psychiatric disorders that are associated with a substantial clinical and economic burden. Hospitalization and in-patient care commonly account for a large proportion of medical costs in these illnesses. A secondary objective of the Italian Burden of Illness on Schizophrenia and BD (IBIS) study is to assess any differences in terms of cost of illness for patients with schizophrenia and BD switching from QTP-IR to QTP-XR. **METHODS:** Multicenter, retrospective, observational, real world cohort study (NCT01392482). The data shown are interim results collected from administrative databases in 6 of 20 Italian Local Health Units included in the study. Data were collected between 1 January 2009 and 31 December 2010. Patients that switched from QTP-IR to QTP-XR were included for analysis. Data were collected 6 months before (IR period) and 6 months after (XR period) the switch. **RESULTS:** In total, 213 patients switched medication from QTP-IR to QTP-XR (86 with schizophrenia, 127 with BD). For patients with schizophrenia, disease-related costs per patient totaled €4123 during the IR period and €3832 during the XR period, indicating a decrease of 7%. Although hospitalization costs per patient remained similar after the switch (IR period: €1111, 26.9% of total costs; XR period: €998, 26.0% of total costs), care/nursing home costs decreased in the XR period (IR period: €1906, 46.2% of total costs; XR period: €1330, 34.7% of total costs). For patients with BD, disease-related costs per patient decreased by 23%, from €3877 during the IR period to €2,973 during the XR period. Hospitalization costs per patient fell substantially after the switch (IR period: €2659, 68.6% of total costs; XR period: €1,171, 39.4% of total costs). **CONCLUSIONS:** These interim results suggest that switching from QTP-IR to QTP-XR decreases direct health care costs and in-patient resource use.

PMH26

MODELING ECONOMIC CONSEQUENCES OF CARDIOMETABOLIC CHANGES WITH LURASIDONE VERSUS OTHER ATYPICAL ANTIPSYCHOTICS IN SCHIZOPHRENIA

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OBJECTIVES: To assess the cost-consequences of cardiometabolic effects of lurasidone versus other atypical antipsychotics in adults with schizophrenia and compare the results based on published cardiovascular and diabetes risk equations from the Framingham Heart Study (FHS), the Atherosclerosis Risk in Communities study (ARIC), and the San Antonio Heart Study (SAHS). **METHODS:** A discrete event simulation model was developed to simulate the economic outcomes based on cardiometabolic parameter changes after 1-year treatment. With a 3-year time horizon, the model predicted the number of: 1) incident diabetes cases using each of the risk equations, and 2) cardiovascular events (e.g., coronary heart disease (CHD), stroke) (CVD) based on updated cardiometabolic values at 1 year, and estimated the costs associated with each event. Data were drawn from comparative clinical trials of lurasidone for lurasidone, risperidone, and quetiapine, and from the literature for olanzapine. Cost data in 2011 values were obtained from public data sources and discounted at 3.5% annually. **RESULTS:** Compared with olanzapine, risperidone, and quetiapine, lurasidone: 1) avoided 119, 15, and 7 diabetes cases and saved $1708, $192, and $95 per patient, excluding the costs of antipsychotics and other events, respectively, when using FHS equation; 2) avoided 58, 8, and 0 diabetes cases and saved $1,036, $114, and $22 when using SAHS equation; and 3) avoided 52, 7, and 7 diabetes cases and saved $900, $76, and $88 when using ARIC equation. Incidence of other CVD events was low across all drugs in the model due to the short time-horizon. Lurasidone saved ≥$9600 per patient in all comparisons when costs of other CVD events and antipsychotics were included. **CONCLUSIONS:** In this analysis, lurasidone was a cost-saving option compared to other antipsychotics. Although the magnitude of cost savings with lurasidone differed based on the risk equation used, cost savings with lurasidone were consistently observed.

PMH27

ECONOMIC IMPACT ASSOCIATED WITH ANTIDEPRESSANT USE IN DEPRESSION AND ANXIETY IN COMMUNITY LIVING OLDER ADULTS

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OBJECTIVES: The aim of this study is to assess the health system and patient costs associated with antidepressant (AD) use considering the presence and persistence of depression and anxiety. **METHODS:** The data was retained from a population-based health survey on 2004 community dwelling older adults aged ≥ 65 years participating in the ESA (Étude sur la Santé des Aînés) study. Depression and anxiety were assessed using DSM-IV criteria and measured at 2 time points one year apart. Medical and non-medical costs were considered. Medication and health service use and costs were identified from provincial administrative databases. The excess costs associated with AD use as a function of mental health status was analysed using generalized linear models with a gamma distribution (log link), controlling for a number of factors. **RESULTS:** The prevalence of antidepressant use reached 15.5%: SSRIs followed by TCAs were the most common. Significantly higher health care costs (Δ: $2840, Wald $\chi 2=60.00$, df=1, $p<0.0001$) were associated with AD use. Among antidepressant users, the results did not show any differences in costs when accounting for dosage, the number of episodes of use and the presence of antidepressant switches. Among persistent cases of depression and anxiety the use of AD was associated with lower adjusted total costs reaching CDN $2724 and CDN $2114, respectively. The use of AD can result in cost savings reaching $154.6 million and $118.4 million per 1 000 000 population, for persistent cases of depression and anxiety. **CONCLUSIONS:** This study showed important cost savings associated with AD use in persistent cases of depression and anxiety. Future studies should focus on further exploring potential cost savings associated with different classes of AD in the treatment of different clinical profiles of depression and anxiety and this in the older adult population.

PMH28

IDENTIFYING CHARACTERISTICS OF PATIENTS WITH HIGH SCHIZOPHRENIA-RELATED COSTS

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OBJECTIVES: The objective of this study was to identify the demographic and clinical characteristics of schizophrenia patients who experience high schizophrenia-related direct medical costs. **METHODS:** Patients with a diagnosis for schizophrenic disorder (ICD-9-CM code 295) and other non-organic psychoses (ICD-9-CM code 298) were identified from the 2005-2008 Medical Expenditure Panel Survey (MEPS), a national representative annual survey of non-institutionalized US residents. Schizophrenia-related direct medical costs were calculated for the following utilization categories: inpatient hospitalizations, prescription medications, and outpatient, office-based physician, emergency department, and home healthcare visits. Based on the distribution of their total costs, patients were classified into high-cost (expenditures≥$16,000) and low-cost (expenditures<$16,000) groups. Logistic regression was used to determine the likelihood of high-cost group membership based on patient demographic and clinical characteristics. Generalized Linear Models (GLM) regression was used to evaluate the relationships between the independent variables and costs. **RESULTS:** There were 317 patients (weighted frequency=2.75 million) with schizophrenia-related costs. Based on the logistic regression procedure, it was seen that older patients were less likely to be in the high-cost group; for each one-year increase in age, patients were 6.4% less likely to have high costs (odds ratio [OR]=0.936). Patients with a spouse were 83.0% less likely than those without a spouse to be in the high-cost group (OR=0.170). The GLM regression procedure showed that age, race, and region of residence were significantly associated with costs. On controlling for other factors, with a one year increase in age, costs decreased by $127 ($p=0.001$), Caucasians spent $3,831 ($p=0.019$) less than African Americans, and patients living in Southern US spent $3,718 ($p=0.01$) less than those living in the Northeast. **CONCLUSIONS:** Identifying the high-risk population may help policy makers allocate resources more efficiently and health care providers manage patients more effectively through assignment of high-risk patients to case managers and appropriate monitoring and treatment.

PMH29

ESTIMATES OF SCHIZOPHRENIA-RELATED DIRECT MEDICAL COSTS USING ATTRIBUTABLE AND INCREMENTAL COST APPROACHES

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OBJECTIVES: To estimate the schizophrenia-related direct medical costs using the attributable and incremental cost approaches. **METHODS:** Patients with a diagnosis for schizophrenic disorder (ICD-9-CM code 295) and other non-organic psychoses (ICD-9-CM code 298) were identified from the 2005-2008 Medical Expenditure Panel Survey (MEPS), a nationally representative annual dataset of non-institutionalized US residents. Schizophrenia-related direct medical costs were estimated for inpatient hospitalizations, prescription medications, and outpatient, office-based physician, emergency department, and home healthcare visits, and overall. For the attributable cost approach, schizophrenia-related costs were identified from each of the MEPS event files. For the incremental cost approach, the differences between the costs for patients with and without schizophrenia for each service type were calculated to yield the schizophrenia-associated incremental costs. **RESULTS:** We identified 348 patients with schizophrenia (weighted frequency=3.03 million). The mean schizophrenia-related direct medical cost per patient-year using the attributable cost approach was $5,538 (SE=$570). With the incremental cost approach, the mean cost per patient-year was $12,369 (SE=$1,205) for schizophrenia patients and $3,198 (SE=$47) for non-schizophrenia patients. Thus, the incremental cost associated with schizophrenia was $9171 (SE=1207) per patient-year. When demographic and clinical factors such as age, sex, race, marital status, insurance status, socioeconomic status, region of residence, perceived health status, mental health status, number of medical comorbidities, and number of mental health-related comorbidities were controlled for using ordinary least squares regression, the mean schizophrenia-related incremental direct medical cost per patient-year was $5115 (SE=$1240). **CONCLUSIONS:** This study highlights the high financial burden of schizophrenia. Although the mean cost per patient-year estimated using the incremental cost approach was higher than that obtained using the attributable